ABSTRACT

Earthquake has become the second most frequently occurred disaster in Indonesia. In the past decades, Indonesia has experienced several major earthquakes and countless small earthquakes. On April 18, 2018, an earthquake shook Banjarnegara, a regency located in Central Java Province, Indonesia. The earthquake was measured as a 4.4-magnitude at a depth of 4 km. Although the magnitude was small, the earthquake caused major damages to buildings on the surface. There is a tool to estimate the damages of building subjected to particular hazard such as earthquake. This tool is called HAZUS. It is Developed by FEMA and used for mitigation, recovery, preparedness, and response. However, HAZUS is developed based on the judgment, performance, and experience data of the building in its origin country, United States. This research aims to utilize HAZUS to estimate building damages on masonry buildings in Kasinoman Village subjected to the 2018 Banjarnegara Earthquake, Indonesia. The result of HAZUS damage estimation is compared to the actual damages which were obtained from the field survey. The result shows that HAZUS estimation tends to underestimate the actual damages. This may be caused by the differences in construction quality, material quality, and other factors which lead to differences in performance between building type of HAZUS and building type of Kasinoman Village. Therefore, a fragility curve for building type of Kasinoman Village is generated in this research in accordance with the performance of the building subjected to the 2018 Banjarnegara earthquake.

Keywords: Actual Damages, Estimated Damages, Earthquake, HAZUS